

Application No. 09/856,431

Our Case No. 09799107-0006

IN THE CLAIMS

This listing of claims replaces all prior listings:

1. (Currently amended) A secondary battery comprising:

a negative electrodes;

a positive electrode; and

an electrolyte, wherein:

the negative electrode includes a negative electrode material capable of occluding and releasing light metal in an ionic state while the light metal precipitates on the negative electrode in a state where an open circuit voltage is lower than an overcharge voltage; and

wherein the open circuit voltage of the battery is below overcharging voltages, the ratio (moles of light metal precipitated on the negative electrode) / (moles of light metal reversibly occluded in the material of the negative electrode) is at least 0.05/1 and at most 3/1.

2. (Previously presented) A secondary battery as claimed in claim 1, wherein the light metal comprises lithium.

3. (Previously presented) A secondary battery as claimed in claim 2, wherein lithium precipitates on the negative electrode when the open circuit voltage of the battery is at least 0 V and at most 4.2 V.

4. (Original) A secondary battery as claimed in claim 2, wherein a peak attributed to lithium ion and a peak attributed to lithium metal are obtained when measuring the negative electrode material in a full-charged state by a ^7Li polynuclear species nuclear magnetic resonance spectroscopy.

Application No. 09/856,431

Our Case No. 09799107-0006

5. (Original) A secondary battery as claimed in claim 4, wherein the peak attributed to lithium ion measured in the full-charged state disappears when measuring the negative electrode material in a complete-discharged state by the ^7Li polynuclear species nuclear magnetic resonance spectroscopy.

6. (Previously presented) A secondary battery as claimed in claim 1, wherein the light metal precipitates on the negative electrode material.

7. (Canceled)

8. (Original) A secondary battery as claimed in claim 1, wherein the ability of charging capacity of the negative electrode material is 150 mAh/g and more.

9. (Previously presented) A secondary battery as claimed in claim 2, wherein the negative electrode has a negative electrode mixture layer containing the negative electrode material and the thickness of the negative electrode mixture layer is from at least 10 μm to at most 300 μm .

10. (Previously presented) A secondary battery as claimed in claim 1, wherein the negative electrode material contains 50 percent by weight and more of a negative electrode active material.

11. (Original) A secondary battery as claimed in claim 1, wherein the negative electrode contains a carbonaceous material as the negative electrode material.

12. (Original) A secondary battery as claimed in claim 1, wherein the positive electrode contains an oxide containing the light metal.

13. (Original) A secondary battery as claimed in claim 1, wherein the positive electrode contains metallic carbonate.

Application No. 09/856,431

Our Case No. 09799107-0006

14. (Original) A secondary battery as claimed in claim 13, wherein the metallic carbonate is lithium carbonate.

15. (Previously presented) A secondary battery as claimed in claim 1, wherein the electrolyte contains at least one of the group consisting of ethylene carbonate and propylene carbonate.

16. (Previously presented) A secondary battery as claimed in claim 15, wherein the electrolyte contains a non-aqueous solvent which contains propylene carbonate with a concentration of less than 30 percent by weight.

17. (Original) A secondary battery as claimed in claim 15, wherein the electrolyte contains ethylene carbonate and propylene carbonate and a mass fraction of mixing ethylene carbonate to propylene carbonate (ethylene carbonate/propylene carbonate) is 0.5 and more.

18. (Previously presented) A secondary battery as claimed in claim 1, wherein the electrolyte contains at least one of the group consisting of chain ester carbonate, 2,4-difluoroanisole, and vinylene carbonate.

19. (Previously presented) A secondary battery as claimed in claim 18, wherein the electrolyte contains a non-aqueous solvent which contains 2,4-difluoroanisole at a concentration of 15 percent by weight and below.

20. (Previously presented) A secondary battery as claimed in claim 18, wherein the electrolyte contains a non-aqueous solvent which contains vinylene carbonate with a concentration of 15 percent by weight and below.

21. (Original) A secondary battery as claimed in claim 1, wherein the electrolyte contains ethylene carbonate, propylene carbonate, dimethyl carbonate, and ethyl-methyl carbonate.

Application No. 09/856,431

Our Case No. 09799107-0006

22. (Original) A secondary battery as claimed in claim 1, wherein the electrolyte contains LiPF_6 .

23. (Original) A secondary battery as claimed in claim 1, wherein the electrolyte is in a solid state.

24 - 43. (Canceled)